THE REPUBLIC OF UGANDA

MINISTRY OF ANIMAL RESOURCES

# Annual Report of the FISHERIES DEPARTMENT

FOR THE YEAR ENDED 31ST DECEMBER, 1971

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# Annual Report

# of the

# FISHERIES DEPARTMENT

For The Year Ended 31st December, 1971

CONTENTS

## *FOREWORD*

*It gives me much pleasure to write this short foreword introducing the report of the Fisheries Department for the year 1971. The Fisheries Department of the Ministry of Animal Resources is charged with the task of directing the development. utilisation and scientific management of the fisheries resources of this nation in order to ensure that our people will continue to benefit from this resource not only as a revenue earner but also as a constant source of the much needed animal protein. The Department is also responsible for the control of the Crocodile Industry.*

*It is satisfying to note that this report sets out clearly the various activities undertaken by my Ministry in the field of fisheries. It has highlighted some commendable achievements for fisheries to claim its place among the rapidly expanding rural industries in this country. Fish production now at 162,000 metric tons per annum worth over 130 million shillings at the lakeshore, is not only a source of food but also a source of employment. It is believed that the Fishing Industry is at the moment employing more than 35,000 people in the various aspects of the industry, for example, fishing, fish processing, fish marketing and manufacture of fishing equipment. It is, therefore, greatly contributing not only to our nutrition but also to our economic development.*

*H. S. K. NSUBUGA,*
*Acting Minister of Animal Resources.*

# FISHERIES DEPARTMENT ANNUAL REPORT, 1971

## INTRODUCTION

The fishing industry continued to show steady progress during 1971. Fish catches in most areas continued to rise and the total production was estimated at 162,310 as compared with 139,080 in 1970. The marketing and distribution side of the industry was as active as ever. 78 specific licences were issued and 4,314 people took out fishmongers' licences. Most of the fish was consumed within Uganda and only 262·6 tons of frozen and 931·4 tons of dried fish were exported.

Lake Kyoga Region, as in the previous four years, continued to register expanding catches resulting from the exploitation of both Nile Perch and the introduced *Tilapia* species.

Nile Perch contributed 49·5 per cent of the total catch of fish from Lake Kyoga. The photograph shows a Nile Perch being carried by two strong men.

The department, in conjunction with the Food and Agriculture Organisation of the United Nations, organised a training centre on small fishing boats design and construction which was held at the Fisheries Training Institute. The centre was sponsored by the Swedish International Development Agency and was attended by participants from Tanzania, Kenya, Malawi and Uganda. The centre lasted for six weeks and was followed by a seminar for Senior Fisheries Officers from Kenya, Sudan, Uganda and also attended by Senior Officers representing various dealers in outboard and inboard engines both from Uganda and overseas as well as officials from firms dealing in materials used in the boat-building industry.

**Table I—Uganda Fish Production in M. tons in 1971**

| Body of Water | Wt. in M. tons |
|---|---|
| 1. Lake Kyoga .. .. .. .. | 89,724 |
| 2. Lake Edward/George/Kazinga Channel .. | t1,726 |
| 3. Lake Victoria (West) .. .. .. | 20,703 |
| 4. Lake Victoria (East) .. .. .. | 17,367 |
| 5. Lake Albert .. .. .. .. | 9,500 |
| 6. Albert Nile .. .. .. .. | 4,170 |
| 7. Lake Wamala .. .. .. .. | 5,197 |
| 8. Minor Lakes in Ankole and Kigezi .. | 2,435 |
| 9. Rivers, dams and ponds .. .. .. | 1,495 |
| TOTAL .. | 162,317 |

## FISHERIES BY REGIONS

### 1. Lake Kyoga Region

The estimated catch in Lake Kyoga Region was of the order of 89,724 metric tons, showing an increase of 38·1 per cent over the 1970 figure. There was a marked increase in the fishing effort, exemplified both by the number of fishermen and the quantity of nets used by each canoe fishing. A large number of fishermen moved into the region, particularly from Lake Victoria Region, but there was also a large number of non-Ugandan fishermen who took up fishing in the region, taking advantage of the more favourable conditions offered by the Military Government. Nile Perch and *Tilapia nilotica* once again dominated the catches contributing 49·5 per cent and 38·9 per cent, respectively, to the total catch. *Protopterus* decreased by 3·4 per cent as compared with the 1970 figure.

The year was one of relatively small rainfall and the level of the lake receded quite appreciably, allowing access to a large number of landings. As the lake level went down a large number of floating islands settled down and by the end of the year the lake was almost clear of floating islands. This was a great relief to the fishermen who often lost their nets, which were frequently whirled by these islands unless the fishermen kept watch over them at night and removed the nets before an island arrived.

The murram piers constructed at Mugarama and Lwampanga and some other landings during the previous years proved very useful, particularly during times when landings were still muddy, but wave action had eroded these piers causing considerable damage. Most of the piers were in need of repair particularly at Mugarama and Muntu.

Access roads to a number of landings were repaired by the District Administrations and a new approach road was constructed providing access to Swagire landing. Work was in hand on the reorganisation of Kagwara and Swagire fish landings, necessitating the construction of better houses on a well worked out plan. However, there was lack of co-operation from the fishermen who considered themselves as migrants.

**Table II—Estimated Annual Fish Production from Lake Kyoga (1971)**

| Area | T. nilotica | T. leuc. | T. esc. | T. var. | T. zil. | Syn. | Bag. | Barb. | Clar. | Lates | Mormy | Prot. | Sch. | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | M. tons | M. tons | M. tons | M. tons | M. tons | M. tons | M. tons | M. tons | M. tons | M. tons | M. tons | M. tons | M. tons | M. tons |
| Ochero .. .. | 533.6 | — | 10.8 | 36.1 | — | — | — | — | — | 6,626.5 | — | 3.6 | — | 7,210.6 |
| Bugondo .. | 245.0 | — | — | 2.2 | — | — | — | — | — | 1,948.8 | — | 11.0 | — | 2,207.0 |
| Serere .. .. | 388.5 | — | 119 8 | 189.9 | 11.7 | — | — | — | 20.4 | 587.2 | 2.9 | 1,600.9 | — | 2,921.3 |
| Labori .. .. | 573.9 | — | — | — | .8 | — | — | — | 12.2 | 3,587.0 | .4 | 21.0 | — | 4,195.3 |
| Soroti .. .. | 256.6 | — | — | — | 2.7 | — | — | .4 | 16.5 | 190.0 | .5 | 8·4 | — | 475.1 |
| Kumi .. .. | 20.6 | — | 117.6 | 273.6 | 65.4 | — | — | — | 32.0 | 221.6 | 3.8 | 1,649.2 | 1.9 | 2,385.7 |
| Kobwin .. | 104.0 | 34.2 | 142.0 | 69.9 | 4.4 | 1.6 | — | — | 90.0 | — | .5 | 441.1 | — | 887.7 |
| Pallisa .. .. | 226.8 | 4.5 | 286.9 | 12.0 | 1.5 | 1.4 | — | — | 97.6 | — | 1.4 | 869.7 | — | 1,501.8 |
| Kidera .. .. | 850.1 | .2 | — | 34.2 | 1.6 | — | — | .2 | 3.7 | 6,787.9 | 1.5 | 49.0 | — | 7,728.4 |
| Galiraya .. .. | 1,057.8 | — | — | — | — | 36.7 | — | — | 20.9 | 4,016.5 | 5.3 | 99.5 | — | 5,236.7 |
| Kagulu .. .. | 132.0 | — | 377.6 | — | — | — | — | — | 62.9 | 1,039.5 | 6.1 | 412.1 | — | 2,030.2 |
| Lwampanga .. | 21,718.6 | 57.2 | — | — | — | — | 5.7 | .3 | 17.2 | 5,894.6 | 34.0 | 887.1 | — | 28,614.7 |
| Namasale .. | 994.5 | — | — | 3.6 | — | — | — | — | — | 179.4 | — | 10.7 | — | 1,188.2 |
| Nabieso .. .. | 4,634.6 | — | — | — | 254.6 | — | — | — | 50.9 | 5,235.6 | 7.1 | 3.1 | — | 10,185.9 |
| Amolatar .. | 331.7 | — | — | 398.7 | 21 2 | — | — | — | 5.3 | 1,870.9 | — | 31.9 | — | 2,653.7 |
| Akokoro .. | 3,838.2 | 6.8 | — | — | 47.4 | — | — | 28.8 | 89.7 | 4,349.1 | 20.2 | 79.5 | — | 8,459.7 |
| R. Nile .. .. | — | — | — | — | — | — | — | — | — | — | — | — | — | 1,014.4 |
| Busoga .. .. | — | — | — | — | — | — | — | — | — | — | — | — | — | 827.7 |
| Bunyoro .. | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

*Estimated value Shs. 51,004,370. 89,724.1

T. leuc. = leucosticta
T. esc. = esculenta
T. var. = variabilis
T. zil. = zilli
Syn. = Synodontis
Bag. = Bagrus
Barb. = Barbus
Clar. = Clarias
Mormy. = Mormyrus
Prot. = Protopterus
Sch. = Schilbe

## Fishing Gear

Fishing gear on Lake Kyoga mainly comprised of gill nets, the mesh sizes of which ranged from 1½ to 14 inches. The most commonly used nets were those with mesh sizes 4 to 8 inches for *Tilapia* species and 7 to 11 inches for Nile Perch and large *T. nilotica*. In recent years there has been a tendency to change from small mesh nets to the larger ones for catching Nile Perch. The Fisheries Assistants, particularly the ex-students of the Fisheries Training Institute, played a very important part in teaching the fishermen to hand braid nets, especially those above 9 inches as these were not readily available on market. In addition to gill nets, longlines were very commonly used on Lake Kyoga, mainly for catching Nile Perch, *Protopterus* and *Clarias*. An increasing number of fishermen were taking to trolling. In the swamp areas and on the minor lakes, fishermen were still using small mesh nets to catch *Tilapia esculenta* and *Tilapia variabilis*, catches of which on these lakes on the whole showed rising trends as compared with the previous two years.

## Fish Marketing

Demand for fish continued to exceed supply. Lwampanga was once again the main centre of activity, acting as an outlet to many small landings in the vicinity such as Dagala, Kasambya, Nabuso on the western side of the lake and Nabieso on the northern side. Business here was mainly in fresh fish, which was sold to fishmongers from Kampala and other surrounding towns. Seven specific licences were issued at Lwampanga, but there was a large number of unlicensed fish dealers operating from here, and another large number of fishmongers licensed by the District Administrations to engage in the marketing of fish mainly on a retail or hawking basis.

Prices for fresh fish varied greatly at the lakeshore. Prices for smoked fish were in most cases three to four times higher than those for fresh fish especially in the urban areas. While Nile Perch and *Tilapia* sold at almost uniform prices throughout the region, prices for *Protopterus* was five to six times as much in Teso, Lango and Bukedi districts than they were in Bunyoro, East Buganda and Busoga districts. Smoked *Clarias* realised the highest price in all areas of the region.

Fresh fish dealers at Lwampanga adopted a system of buying fish from fishermen while still on the lake. These owned large Nyanza canoes powered with powerful outboard motors which enabled them to collect fish over large areas. This has hampered the staff of the Fisheries Department in their work of collecting statistics as it is not exactly known where the landed catch came from. It has also helped poachers to dispose of their catch without having to come ashore. Ways and means were being sought to combat these practices.

In spite of the large number of concrete block smoke houses which have been built in the region and the high regard in which the product processed in these houses were held by the fishermen and fish processors, not an individual fish smoker had built his own smoke house. The fishermen were, however, convinced of better smoking quality of the products prepared in them, but unfortunately expected the Government to build enough of these to meet the entire demand for these houses in the various fishing villages.

The ice plant at Soroti produced 19,570 kg. of ice during the year. The machine was, however, out of service for three months due to mechanical defects, and on other occasions when it was serviceable it had to be switched off when the ice bin was full and there were not enough ice users to take delivery of the manufactured ice. Fishmongers in general proved slow in adapting themselves to the system of icing fish, although towards the end of the year, three fishmongers

marketing their fish in Mbale and Moroto towns frequently collected ice from the plant to enable them to deliver fish to their customers in those towns on ice. The main drawback on this, however, was the lack of a proper container in which to carry iced fish.

### Boatbuilding

Only three canoes were completed by Bugondo boatbuilders on the subsidy scheme. There were six other approved orders but those could not be met due to difficulties in obtaining timber and fastenings. Under private contracts, the boat-builders constructed large enough number of flat-bottomed boats to keep them busy throughout the year and this type of boat was within the fishermen's means, particularly those who wished to convert from the traditional dugout. The boat-buildings, however, experienced some business management problems and they were partially dissolved towards the end of the year, leaving only one of their members to run the business.

A trained boatbuilder, formerly with a firm of modern boatbuilders at Jinja, set up a boat-yard at Bukungu fishing village, but he was not known in the area and faced keen competition from the beach boatbuilders.

### Fishing Vessel Licence

Licensing of fishing vessels was carried out successfully in most areas, although some areas could not be covered due to difficulty in gaining access to their bases of operation. 222 special licences were issued to non-citizens of Uganda to enable them to fish in Uganda waters. The number of special licences issued were lower than those issued in 1970 due to the late start of the programme.

## 2. Lake Edward/George and the Kazinga Channel Region

For the first two months of the year the region was under the charge of a Fisheries Assistant Grade I, as the Regional Fisheries Officer had been assigned new duties at Headquarters and a replacement was not immediately available. However, an Assistant Fisheries Development Officer was subsequently posted to Kichwamba to take charge of the region. In addition to this officer there were in the region one Fisheries Assistant Grade I, twelve Fisheries Assistants Grade II and one Fish Guard.

As usual, in this region, most of the time of staff was occupied in anti-poaching activities. There was an increase in the use of unlicensed canoes and small size mesh nets, and regular patrols had to be carried out to arrest these activities. Most of the patrols were made in an open fibre glass canoe as the launch 'Eagle' was out of service due to engine troubles and it took considerable time before spares could be obtained from overseas to enable the launch to be put back into service. A good deal of co-operation was received from both the police and park authorities who contributed in no small measure to the success of the anti-poaching operations. 206 unlicensed canoes were destroyed and large quantity of nets of mesh size below 5 inches stretched mesh was confiscated. 23 persons were successfully prosecuted for various offences under the Fish and Crocodiles Act, although due to some loopholes in the Act quite a large number escaped conviction.

There was frequent incidences of encounters between Uganda and Zairean fishermen on Lake Edward, with the result that the Ugandan fishermen sustained losses of 18 canoes, 18 outboard engines and a large quantity of fishing nets. 21 paddlers were kidnapped and taken to Zaire. These incidents mainly involved the border fishing villages of Rwensama and Kayanja but fishermen from Katwe and Kishenyi also were sometimes involved. In some cases it was possible to secure the return of the boats and crews but only after heavy payments of ransom.

## Fish Production

The estimated catch for lakes Edward and George and the Kazinga Channel was 11,725·8 metric tons, reflecting an increase of 1,792·2 tons over the 1970 figure. The largest increase occurred in Lake Edward, where the production was 8,072·9 metric tons as compared to 5,294·1 tons in 1970. This increase can be attributed to the increased use of nets of mesh sizes smaller than 5 inches stretched mesh, as exemplified by the number of *Tilapia* caught, which rose from 6,679,067 in 1970 to 11,692,409 in 1971. The average weight of *Tilapia* caught on Lake Edward dropped from 0·62 kg. per fish in 1970 to 0·57 kg. in 1971. A similar pattern was observed in respect of *Bagrus*. In 1970, 421,548 fish averaging 2·1 kg. was caught as compared with 538,791 caught in 1971, averaging only 1·93 kg. per fish. Catches of *Barbus* more than doubled from 93,567 in 1970 to 210,582 in 1971, but there was only little increase in catches of *Clarias* and *Protopterus,* which species are often taken on longlines. These increased from 30,220 to 40,062 and from 44,570 to 47,966 for *Clarias* and *Protopterus,* respectively.

Catches in the Kazinga Channel remained almost unchanged, with 852·9 metric tons being caught in 1971 as compared with 853·8 tons in 1970. There was, however, a remarkable decline in the catch on Lake George, which recorded only 2,799·9 metric tons as compared with 3,850·63 metric tons in 1970. The catch on Lake George was the lowest in the history of fishery. It is however believed that this catch is only an apparent one, since there was considerable illegal landing of fish at unauthorised places which could not be recorded as it was either disposed of at night, when there were no Fisheries Department staff on duty, or through obsecure channels not known to the departmental staff.

The average weight of *Tilapia* decreased only slightly from 0·56 kg. in 1970 to 0·52 kg. in 1971, indicating only a slight decrease in the mesh sizes of nets used on Lake George.

During patrols on Lake George, large quantities of fish were confiscated on islands where poachers had established large smoking camps. These fish were generally much smaller in size than those recorded by the Fisheries Assistants, which would seem to indicate that the poachers were using nets of small mesh sizes.

Another factor contributory to the small size of fish caught on Lake George is the use of a method of fishing whereby the fish is frightened into the nets by paddlers beating the water around a fleet usually of three set nets. These nets are usually laid near the shores, and it is suspected that they do not only take small size fish but that they also disturb fish which may be on breeding grounds. A careful study is being made of the effect this method of fishing has on the fish stocks with a view to ascertaining whether this method of fishing should be prohibited.

## Disposal of Catch

The two processing plants, Tufmac and Uganda Fresh Fish, operated throughout the year and offered ready markets to the fishermen. There was also a large number of fishmongers with pick-ups operating in the region who purchased large quantities of fish and usually offering higher prices than those offered by the factories. These fishmongers distributed fish mainly to Kampala but also to other centres such as Masaka, Bwera, Kasese, Kilembe and Kabale. In addition, large quantities of fish were smoked or fried and distributed to various markets, Kampala again being the major consumer. Some groups of fish processors prepared fish specifically for Kisumu Market.

**Table III—Fish Products rom Lake Edward/Lake George (1971)**

| Landings | Tilapia | | Bagrus | | Mormyrus | | Barbus | | Clarias | | Protopterus | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | M. tons | No. | M. tons | No. | M. tons | No. | M. tons | No. | M. tons | No. | M. tons |
| Katwe .. .. .. | 3,236,183 | 1845.84 | 179,554 | 325.34 | 76 | 0.070 | 32,649 | 35.18 | 15,170 | 49.95 | 19,066 | 68.56 |
| Kayanja .. .. | 1,372,720 | 764.35 | 125,304 | 253.95 | 261 | 0.460 | 82,636 | 82.45 | 9,851 | 25.44 | 17,087 | 57.36 |
| Kishenyi .. .. | 1,608,545 | 930.20 | 52,298 | 94.54 | 41 | 0.040 | 27,404 | 23.89 | 7,006 | 17.54 | 6,207 | 17.12 |
| Rwensama .. .. | 3,514,754 | 1,883.71 | 131,794 | 259.73 | 372 | 0.490 | 48,930 | 43.76 | 4,785 | 7.31 | 3,517 | 9.18 |
| Kazinga .. .. | 1,960,207 | 1,148.22 | 49,841 | 96 13 | — | — | 18,963 | 19.66 | 3,253 | 7.47 | 2,089 | 4.78 |
| TOTAL .. | 11,692,409 | 6,572.32 | 538,791 | 1,029.69 | 750 | 1.060 | 210,582 | 204.94 | 40,065 | 107.71 | 47,966 | 157.00 |
| KAZINGA CHANNEL | | | | | | | | | | | | |
| Katunguru—Toro/Ankole | 1,060,085 | 595.31 | 67,241 | 118.43 | 239 | 1.300 | 56,242 | 39.45 | 16,237 | 44.08 | 19,057 | 55.35 |
| LAKE GEORGE | | | | | | | | | | | | |
| Kahendero .. | 406,744 | 197.25 | 35,511 | 56.31 | 2 | 0.001 | 1,506 | 1.51 | 12,712 | 29.335 | 29,225 | 98.09 |
| Hamukungu .. .. | 731,333 | 355.15 | 23,240 | 41.09 | — | — | 4,046 | 3 71 | 11,550 | 16.492 | 16,492 | 92.45 |
| Kasenyi .. .. | 495,518 | 245.18 | 27,893 | 46.55 | — | — | 3,648 | 1.83 | 7,414 | 18.085 | 18,085 | 42.99 |
| Kayinja .. .. | 535,787 | 236.32 | 71,245 | 128.59 | 77 | 0.100 | 2,490 | 2.59 | 5,847 | 27.628 | 27,628 | 51.81 |
| Mahyoro .. .. | 803,347 | 472.72 | 95,271 | 126.12 | 4 | 0.002 | 3,987 | 2.76 | 10,902 | 35.774 | 35,774 | 93.10 |
| Kashaka .. .. | 582,576 | 304.92 | 21,110 | 33.68 | — | — | 6,481 | 5.32 | 4,609 | 6.488 | 6,488 | 22.01 |
| TOTAL .. | 3,555,305 | 1,811.54 | 274,270 | 432.34 | 83 | 0.103 | 22,158 | 17.72 | 53,034 | 133.802 | 133,692 | 400.45 |

Two smoke houses were built at Kishenyi fish landing. These had to be slightly modified to facilitate smoking of different species of fish. The houses were highly appreciated by fishermen although not a single fisherman was prepared to construct one at his own initiative.

The Kishenyi to Katunguru/Ishasha feeder road was completed. Survey work commenced on the proposed water supply to Rwenshama fishing village and was still in progress at the close of the year.

Extensions to the boat-yard at Katwe were completed. No boats on subsidy were constructed there, but the boatbuilders received several private orders and also carried out a variety of repair work on the fishermen's boats.

3. Lake Victoria (West) Region

In its fourth year of existence, the fisheries station at Masaka seemed to have established itself properly and known to most fishermen in the region. A number of Fisheries Assistants had now been posted at the various landings on Lake Victoria and also on the minor lakes in Masaka and Ankole districts. No residential staff had yet been posted in the Ssese Islands, this being mainly hindered by the lack of waterborne transport. Without such transport, staff posted to these islands would not carry out their duties effectively. The islands were, however, visited several times by staff from Bukakata although this did not greatly improve collection of statistics.

A total of 1,218 canoes were licensed in the region out of a possible 1,705 estimated fishing. Their distribution was as follows:—

L. Victoria 574, L. Kijanabalora 250, L. Nakivale 105, L. Kachera 170, L. Mburo 34 and 85 on the other smaller lakes in Masaka and Ankole districts.

Licensing was less effective on L. Victoria particularly in the Ssese Islands where lack of transport made coverage difficult and also on L. Kijanabalora where bad roads and the swamps around the lake hindered access to some of the landings.

Poaching was reported on L. Kachera but patrols carried out by the staff did not apprehend any culprits.

Fish production in the Lake Victoria (West) Region was estimated at 20,703 metric tons, showing an increase of 3,025 metric tons over the 1970 figure. This increase, however, is only apparent, resulting from better coverage of statistics collection rather than real increase in the fishing effort or improvement in the catches. On Lake Victoria 9,737·7 metric tons were recorded. This, however, may still be on underestimate as much of the fish caught around the Ssese Islands may not have been accurately recorded due to shortage of staff. Some landings in Masaka District have very bad access roads, while others are only temporarily in existence and disappear when conditions at the more traditional landing places have improved. This renders the collection of statistics difficult and erroneous. In past years it was possible to verify results obtained by Fisheries Assistants by comparing them with results obtained through an aerial survey of fishing craft, followed by an estimate of catch per canoe on the ground to enable an estimate of the catch. The aerial survey was not carried out during 1971 due to circumstances beyond our control.

4. Lake Victoria (East) Region

Fish production from Lake Victoria (East) Region was estimated at 17,367 metric tons, showing an increase of only 247 tons over the 1970 figure. Catches at almost all landings were dominated by *Bagrus* followed by *Tilapia spp.*

Kiyindi was the busiest landing in the region, forming an outlet for fish from the Buvuma Islands. After the construction of a market there, market dues were introduced and this made some of the fishermen who normally landed at Kiyindi decide to land their catch at some of the smaller landings in the vicinity where such dues did not exist. The whole question of market dues collection, however, leaves much to be desired. In any district where this is applicable, there are not enough market dues collectors. Dues do not seem to be uniform in any district and sometimes are only arrived at after bargain with fishermen. Market dues are also collected in places where there are no markets.

Masese recorded reduced landings of only 852·8 metric tons dominated by *Tilapia nilotica.* This great decline was attributed to the large exodus of Jaluo fishermen who had been ordered to leave the country towards the end of 1970.

The fish handling shed at the landing was in full use during the year but the boatbuilders had great difficulties in keeping their business going which was mainly due to lack of proper administration of their company.

The ice plant at Masese suffered considerable breakdowns during the year, which made it difficult to have ice available all the time and to allow for a well organised demonstration of the use of ice to fishmongers and fishermen.

At Bugoto landing in south Busoga, after the improvement had been effected, a large number of fishermen were attracted to land their catch at this landing, which was reflected in almost the doubling of the catch landed in 1970. Most of the fishermen, however, still smoked their fish in the islands and brought it to the landing already smoked. With more resettlement of people in this previously tsetse infested area, it is likely that a large number of fishermen will now be able to call at the landing and land most of their catches in fresh form.

There was a well-marked decline in landings at Majanji. Only 357 tons of fish was landed as compared with 855 tons in 1970. This was partly due to the closure of the old Majanji fish landing and partly due to difficulties in exchange control, as a large number of Kenya fishermen who had previously operated from this area being unable to exchange Uganda currency, diverted their catch to Port Victoria on the Kenya side of the border.

Kigungu landing—near Entebbe—showed increased landings mainly composed of *Tilapia esculenta* obtained from the Salisbury Channel and round the Ssese Islands. Other landings in this region showed variable catches. However, it is not possible to show exactly the ranges from previous catches as these were visited only on a few occasions and most of the catches are estimated from those visits.

5. Lake Albert Region

Fishing generally remained active on Lake Albert although several cases of net thefts were reported at Wanseko and in the Ntoroko areas. Cases were also reported of *Greek* fishermen from Zaire crossing over to the Uganda side of the lake using powerful launches which usually caused considerable damage to fishermen's nets. A number of patrols were made in the area to curb these activities and also the net thefts, but these had to be discontinued when the launch, St. Clair, went out of commission.

Table IV—Estimated Annual Fish Production from Lake Albert (1971)

| Species | Wanseko | Katara | Kabolwa | Karakaba | Bugoigo | Butyaba | Tonya | Ntoroko | Ndaiga |
|---|---|---|---|---|---|---|---|---|---|
| Ngassa .. .. | 221.9 | 16.8 | 508.3 | 136.6 | 455.5 | 126.3 | 525.1 | 619.1 | 342.4 |
| Ngara .. .. | 113.9 | 19.7 | 114.4 | 466.1 | 899.7 | 102.5 | 365 5 | 1,381.8 | 640.5 |
| Mputa .. .. | 126.4 | 47.6 | 119.0 | 42.7 | 397.7 | 10.6 | 64.7 | 703.3 | 130.5 |
| Ngege .. .. | 3.8 | 125.4 | 2.7 | 8.4 | 53.4 | 24.0 | 104.6 | 55.0 | 66.0 |
| Wairindi .. .. | — | 0.3 | 0.07 | 0.20 | 13.1 | 3.5 | 18.6 | 3.4 | — |
| Karuka .. .. | 4.1 | 0.6 | 1.3 | 7.5 | 1.0 | 0.4 | 7.6 | 0.6 | — |
| Wachone .. .. | 0.9 | 0.5 | 113.6 | 280.0 | 0.8 | 0.5 | 0.3 | — | — |
| Semutundu .. .. | 0.6 | 0.07 | 0.1 | 0.2 | 0.8 | 0.08 | 0.2 | — | — |
| Kasulubana .. .. | 0.7 | 3.1 | — | 5.9 | 0.2 | 0.2 | — | — | — |
| Kisinja .. .. | 0.2 | — | 0.2 | 1.3 | 0.2 | 0.1 | 0.3 | — | — |
| Bubu .. .. | 0.5 | 4.9 | 0.5 | 2.8 | 4.2 | 2.1 | 9.0 | 0.2 | — |
| Lanya .. .. | 4.5 | 16.4 | 3.3 | 5.8 | 8.7 | 1.3 | 5.5 | 5.8 | — |
| Mamba .. .. | — | 0.2 | — | — | — | — | — | — | — |
| Mbisa .. .. | 0.6 | 1.4 | 0.9 | 0.7 | 0.2 | — | — | — | — |
| Ngungu .. .. | — | 0.5 | 0.2 | 1.2 | — | — | — | — | — |
| Mpoi .. .. | 0.06 | — | 0.02 | — | 0.06 | — | — | — | — |
| Ntaitai .. .. | — | — | — | — | 0.9 | — | — | — | — |

* Estimated value Shs. 15,000,000.

The breakdown of launches as well as the Land-Rover caused serious drawbacks to several development projects that were underway. The area benefited from visits made by members of staff from the Fish Processing and Marketing Division, who demonstrated better methods of salting fish. However, these experiments were carried out at a time when there was a serious shortage of salt in the area, and it was not possible to immediately assess whether the fishermen would benefit from these demonstrations.

Fish production on Lake Albert was estimated at 9,500 tons, which is almost the same figure as in the previous year. The catch was, as in previous years, dominated by *Alestes baremose* and *Hydrocynus forskalii*. It was observed, however, that fishermen were resorting to the use of very small mesh size nets which would allow the catching of young *Alestes*. Efforts were being made to stop that practice.

With the exception of Bugoigo and Ntoroko, most of the area showed decline in catches ranging from 11 per cent to 85 per cent of the 1970 figure.

While declines of 11 per cent below 1970 figure could be regarded as usual fluctuations in the catch, extremes of up to 85 per cent were the results of excessive net thefts which completely threw a large number of fishermen out of employment.

DISPOSAL OF CATCH

The largest percentage of the catch was disposed of in a lightly salted dried form. Most of the fish caught in the southern end of Lake Albert was disposed of through Ntoroko, and found ready market in Bwamba and some of it ferried across the lake to Zaire. Fish caught in the northern sector of the lake was usually collected at Wanseko and was ferried across the lake to Panyimur from where it was eventually transported by road to Arua or on water to Mahagi Port in Zaire.

6. The Albert Nile Region

A total of 4,170 metric tons of fish was estimated for the Albert Nile Region which covers the Panyimur fish landing on Lake Albert and the Albert Nile. The catch was mainly composed of Ngara and Ngassa species.

One hundred and sixty-two fishermen were licensed in Panyimur area showing a decrease of 38 fishermen from the 1970 figure. The reduction was mainly due to a large number of Zaireans who returned to their country in response to their President's appeal to all Zaire nationals living outside the country to return. Other fishermen migrated to other districts in Uganda where they thought fishing was more remunerative.

On the Albert Nile 716 canoes were estimated to be fishing out of which only 495 were licensed. The bulk of the unlicensed canoes were operating in Madi District where fishermen were still opposed to the licensing system.

Production from the Albert Nile itself was estimated at 1,890 tons, but the potential production of the river appears to be high if only fishermen would change from a subsistence level to a commercial basis.

Seven hundred and eighty fishmongers were licensed in the region by Town Councils and District Administrations to carry out fishmongering business. These brought into the region fish caught from other lake regions in Uganda including Nile Perch from Lake Rudolf in Kenya. Arua was the most active fish market in the region.

Five fishermen obtained new boats under the subsidy scheme, and there were a few more applications for assistance which were still being processed at the end of the year. The standard of fishing boats in the region, however, still remained very low. Out of 880 canoes estimated in the area, only 50 were of the Kabalega type, 100 planked canoes and the rest dugouts including those constructed out of palm trees.

**Table V—Estimated Catch of Fish for Albert Nile and Panyimur Areas for 1971 (M. Tons)**

| Species | Congo Border to Mbaigoiro (including Panyimur) | Panyigoro to Mutir (including Pakwach) | Pawor to Rigbo (including Rhino Camp) | Obongi to Nimule (including Lahori) | Total |
|---|---|---|---|---|---|
| Mpoi .. .. .. .. | — | — | 30.5 | — | 30.5 |
| Ngara .. .. .. .. | 1,096 | 160 | — | — | 1,256.0 |
| Ngassa .. .. .. .. | 1,000 | 120 | — | — | 1,120.0 |
| Mputa .. .. .. .. | 100 | 200 | 350 | 120 | 770.0 |
| Ngege .. .. .. .. | 25 | 62.6 | 413.8 | 250 | 751.4 |
| Wairindi .. .. .. | 10 | 10.2 | 2 | 5 | 27.2 |
| Karuka .. .. .. .. | — | 1 | 1 | 4 | 6 |
| Wachone .. .. .. | 25.1 | 1 | 1 | 6 | 33.1 |
| Kisinja .. .. .. .. | — | 1 | 1 | 3 | 5.0 |
| Kasulubana .. .. .. | 8 | 2.2 | 1 | 2 | 13.2 |
| Semutundu .. .. .. | 5 | 2.0 | 1 | 1 | 9.0 |
| Ngungu .. .. .. .. | — | — | — | — | — |
| Mamba .. .. .. .. | — | — | 5 | 3 | 8 |
| Lanya .. .. .. .. | 2 | 1 | 1.7 | 2 | 6.7 |
| Mbisa .. .. .. .. | — | — | 1 | 128 | 129.0 |
| Bubu .. .. .. .. | 1 | — | 1 | 2 | 3 |
| Ntaitai .. .. .. .. | 1 | — | — | 1 | 2 |
| Wangassa .. .. .. | — | — | — | — | — |
| TOTAL .. | 2,272.1 | 561.0 | 810.0 | 527 | 4,170.1 |

(*a*) Kajansi Experimental Station

The station experienced shortages of staff for the most part of the year. The situation slightly improved when two Fisheries Assistants Grade 1, graduates from the Fisheries Training Institute, were posted to Kajansi to reinforce staff. However, the situation was short-lived. Two Fisheries Officers at the station were involved in a car accident which kept them for sometime in a hospital and then another Fisheries Assistant in charge of experiments was involved in a fire accident and hospitalised. Continued absence of these officers from the station disrupted the smooth running of the station and also interfered with a number of experiments that had been initiated. Particularly affected was the artificial breeding of Grass Carp and *Labeo victorianus*. In the field, it was not possible to establish various fisheries camps as had been planned.

The breeding of the Mirror Carp was quite successful and over 150,000 fry was reared and distributed from Kajansi to various districts in the country. Mbale received the largest share as the fry centre at Bumageni which used to supply fry to this area had been closed down and work on the new fry centre at Namatala had just started. Kigezi District was second, as they had a large number of ponds to be stocked and the small fry centres in Kigezi did not produce enough fry. In Kigezi, there was also a programme for the stocking of lakes Bunyonyi, Mutanda and Kayumbu.

An experiment involving feeding and fertilisation was successfully conducted at the station. Maize bran and whole maize were used as feed for Mirror Carp and chicken droppings were used as the fertiliser. The experiment was terminated after a period of six months and the results indicated that 1,250 kg. of Carp could be raised from one hectare per annum.

The experimental station suffered a great deal from the invasions by fish predators. Large groups of marabou storks invaded the station and in some cases ate fish from a number of ponds and completely wiped out the stocks in some of these ponds. Other predators included the monitor lizards, fish eagles and some other fish eating birds. These greatly interfered with a number of experiments, which had to be terminated when the stocks became very low. All attempts were being made to eradicate these predators.

One hundred and twenty-three fish ponds constructed by fish farmers were stocked by the departmental staff. The rate of growth of fish in farmers' ponds was reported to be improving, particularly where the farmers have realised the importance of feeding and fertilising their ponds. This was particularly observed in the county of Bulemezi in East Buganda.

A lot of attention was given to the development of dam fisheries. A large number of people were issued with licences to fish in those dams where fish had already established itself and a good number of dams that had not been sufficiently stocked with fish, were restocked. It is difficult to estimate the quantity of fish that was cropped out of these dams as most of the fishermen did not declare their monthly catches.

(*b*) Kigezi

It was a busy time in Kigezi District during the year and fish pond construction was resumed. Forty new ponds were constructed during the year under the supervision of fisheries staff. All these ponds were stocked with Mirror Carp (*Cyprinus carpio*). Large quantities of Mirror Carp fry as well as *Tilapia* fry was stocked in Lake Bunyonyi and Lake Kayumbu. By the end of the year the planted fish were beginning to take root.

Although fisheries staff were all out to assist the private fish pond owners, pond yield fell short of the expected figures due to the many predators which included otters and various other fish eating birds. Some of the most effective measures to control the predators could not be applied as most of fish farmers could not afford fencing their ponds to keep away the otters or they could not shoot down the birds.

The four fry centres in the region were well maintained. Four successful carp spawning were obtained but fry raised to stocking stage was able to meet only about $\frac{1}{3}$ of the fish ponds requirement.

In addition to fish production, Kitanga Demonstration Fish Farm played its useful role as a demonstration centre. A large number of people called at the farm and they received lectures and demonstrations on practical methods of raising fish. After such demonstrations many people expressed their desire to construct ponds or to improve on their technique of fish production.

Besides Lake Edward whose fish production has already been included under Kichwamba Region, lakes in the region had a stable fish production with slight fluctuations. In all 100·5 metric tons of fish was caught from Kigezi and Ankole minor lakes and this was worth Shs. 100,000. This was considered a good catch as most of these lakes were still being restocked. Carp stocked in the minor lakes in Kigezi was being caught in increasing numbers.

(*c*) Acholi District

More achievements were realised in the district as staff position improved by posting two more officers in the area. One of these officers was specifically to work on dams and water tanks development while the other officer reinforced the existing staff.

As already stated under Kajansi, Acholi District had the greatest number of new ponds constructed, and it was very encouraging to note that the average sizes of ponds had risen from 300 sq. metres to 450 sq. metres. This was a great improvement and it was hoped that such a trend would continue. The number of fish ponds in the district rose to 1,085.

Ponds were stocked with fish as the need arose and by the end of the year 20,000 fish fry had been stocked in 146 ponds. Rate of growth of fish in most of the ponds was improving as fish farmers became aware of the need for supplementary feeding and fertilization. Fish pond production improved but this was difficult to ascertain as farmers neglected or deliberately refused keeping records of fish cropped from their ponds. However, an estimate of 21·7 metric tons was obtained worth Shs. 54,250, revenue to the fish farmers.

Regarding dam fisheries, there was a break through when an officer was detailed to survey all the dams and water tanks in the area. This work was not completed and it was to continue in the following year. However, it was already obvious that the number of dams and water tanks was large and that quite a number of them needed restocking with fish.

(*d*) Lake Wamala

Fishing industry prospered very well on Lake Wamala and 5,196·7 metric tons of fish worth over Shs. 4 million at the lakeshore was landed. This tonnage, however, was less than that of the previous year which may be due to the fact that there was intensified law enforcement. Several patrols were carried out which resulted in the capture of 760 unlicensed canoes. As no body dared to claim any of these canoes, all were destroyed by means of axe and fire. In addition to these canoes, a large number of fishing nets of either prohibited mesh sizes or found in unlicensed canoes were also destroyed. All these measures resulted in a drop in the catch but raised the average size of fish landed.

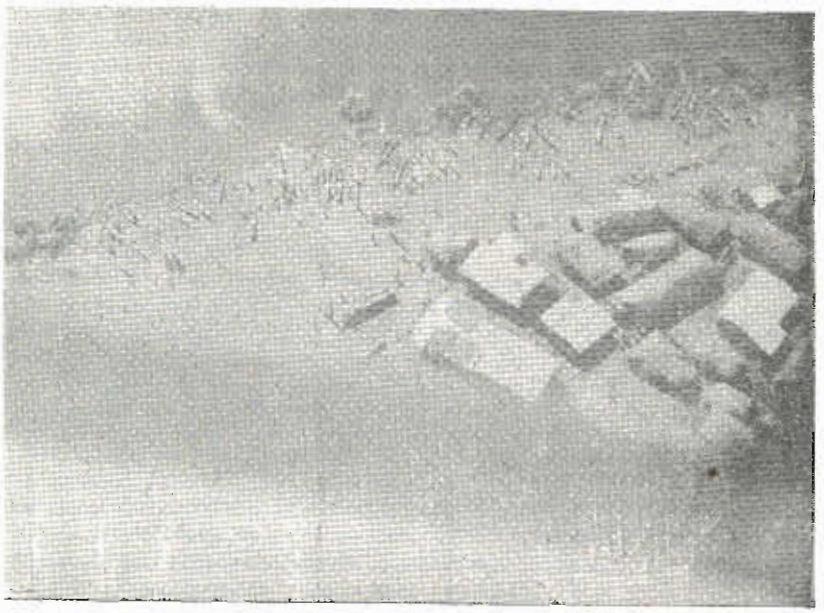
**Table VI—Estimated Catch of Fish on Lake Wamala or the Year 1971**

**Fish Species in Numbers and Weights**

| District and County | Landings | T. nilotica | | T. Leucosticta | | Clarias | | Protopterus | | Total | Estimated Value |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | No. | Wt. Tons | No. | Wt. Tons | No. | Wt. Tons | No. | Wt. Tons | Wt. Tons | *Shs.* |
| West Buganda | Kalulendera .. | 288,431 | 135.304 | 113,963 | 46.138 | 3,912 | 8.891 | 6,242 | 17.294 | 207.627 | 580,840 |
| | Lnmoni .. | 135,499 | 60.511 | 53,965 | 22.175 | 2,664 | 6.592 | 5,397 | 16.691 | 105.969 | |
| Gomba .. | Mamba .. | 896,832 | 285.413 | 215,350 | 88.115 | 16,774 | 39.252 | 23,068 | 59.121 | 471.901 | |
| | TOTAL .. | 1,320,762 | 481.228 | 382,378 | 156.428 | 23,350 | 54.735 | 34,707 | 93.106 | 785.497 | |
| Mubende .. | Kimuli .. | 2,096,437 | 985.320 | 905,439 | 356.235 | 17,205 | 36.949 | 42,963 | 140.709 | 1,519.213 | 2,810,280 |
| | Lusalira .. | 2,037,460 | 904.758 | 916,769 | 422.839 | 23,256 | 51.272 | 34,756 | 82.885 | 1,461.754 | |
| Busujju .. | Kyandalo .. | 245,906 | 105.177 | 99,271 | 40 260 | 3,871 | 8.324 | 5,845 | 17.019 | 170.780 | |
| | Kalyankoko .. | 134,397 | 66.906 | 63,359 | 25.743 | 8,983 | 22.740 | 13,633 | 45.082 | 160.471 | |
| | Busibazi .. | 407,344 | 196.460 | 207,251 | 86.900 | 5,492 | 11 732 | 9,321 | 19.028 | 314.140 | |
| | TOTAL .. | 4,921,544 | 2,258.641 | 2,192,089 | 931.977 | 58,807 | 131.017 | 106,248 | 304.723 | 3,626.358 | |
| Singo .. | Butebi .. | 343,146 | 165.154 | 56,471 | 22 271 | 7,082 | 16.627 | 16,200 | 63.878 | 267.930 | 6,175,003 |
| | Bukanaga | 132,761 | 52.612 | 27,779 | 10.189 | 5,757 | 16.391 | 15,208 | 59.209 | 138.401 | |
| | Gombe .. | 404,828 | 21.580 | 61,469 | 22.871 | 10,472 | 20.882 | 18,356 | 70.611 | 135.944 | |
| | Minor Landings | 192,523 | 109 043 | 37,309 | 13.189 | 5,626 | 24.480 | 23,211 | 95.897 | 242.609 | |
| | TOTAL .. | 1,073,258 | 348.389 | 183,028 | 68.520 | 32,937 | 78 380 | 72,955 | 289.595 | 784.884 | |
| | GRAND TOTAL | 7,315,564 | 3,088 258 | 2,758,395 | 1,156.925 | 115,094 | 264.132 | 213,930 | 687.424 | 5,196.739 | 4,062,620 |

Estimated catch on Lake Wamala: 5,196,739.

Estimated value of fish at the Laudings: Shs. 4,063,600.



Lusalira landing on Lake Wamala. It handles more than 32 per cent of the fish from this lake.

Fishermen on the lake experienced two major problems, namely, theft of nets and the loss of nets through floating islands. Both of these robbed fishermen of substantial quantities of nets. Although attempts were made to arrest the thieves, there was nothing that could stop the floating islands which seemed to have increased in number as the water level still remained high.

(*e*) Mbale Region

Mbale Region covers the districts of Bugisu, Sebei, and Bukedi. There was a critical staff shortage in the region due to inevitable transfers and the fact that the Fisheries Officer-in-Charge had to leave for an overseas course.

Two hundred new ponds were recorded in the region, covering 5·21 hectares. Ponds in this region, particularly in Bugisu and Sebei districts, have to be small in size due to the terrain of the country.

As Bumageni Fry Centre had been closed down, the region had to depend on Kajansi Experimental Station for supply of fry. 25,890 Carp fry were distributed from Kajansi Experimental Station. However, this was not enough to meet demand and a large number of ponds, as in the previous year, remained unstocked.

Cropping of farmers' ponds was hindered by the lack of suitable nets readily available to the farmers. Farmers were generally opposed to the draining of ponds at cropping stage as they considered this did save the young ones. Towards the end of the year, however, the department was able to obtain some seine nets and this enabled some cropping of some farmers' ponds.

Some difficulties regarding transport were experienced. The departmental Land-Rover was unserviceable for about four months in the year, and the topography in some parts of the region was not conducive to the use of bicycles by the Fisheries Assistants.

Efforts were made to revive some of the neglected ponds, while advice was given to those farmers wishing to construct new ponds. 200 new ponds constructed in the region were distributed as follows:—

| *District* | *Number of ponds* |
|---|---|
| Bukedi ... ... | 140 |
| Bugisu ... ... | 40 |
| Sebei ... ... | 20 |

The Young Farmers Association of Uganda in Samia Bugwe took a very active part.

BUMAGENI FRY CENTRE

The seven ponds at this fry centre, formerly used for breeding fish, were cleaned up and repaired. After they had been stocked with carp they were handed over to the Uganda Army who showed keen interest in maintaining them.

(*f*) Trout Fisheries

The path along Sipi River was well maintained throughout the year to enable easy access to the river by anglers There was, however, extensive poaching by the local residents which kept the trout population in the stream low. Only five anglers took out licences for trout fishing during the year, but did not submit reports on their success or failure.

## FISHERIES TRAINING INSTITUTE

The Fisheries Training Institute had yet another busy year. A total of 74 students attended the regular courses at the Institute while 55 were admitted for *ad hoc* courses in boatbuilding, basic principles of engine repair and fishing gear technology.

The staff situation remained generally satisfactory despite several departures. Among those leaving the Institute during the year was Mr. B. Gooding who was largely instrumental in developing the boatbuilding training programmes in Uganda. Mr. Gooding started his assignment in Uganda at the Masindi Technical School, then at Kichwamba Technical School, and later moved to Fisheries Training Institute when the boatbuilding division eventually transferred to the Fisheries Training Institute in Entebbe. Another staff member to leave the Institute was Mr. C. C. Tait of the Food and Agriculture Organisation of the United Nations, who had served as a member of the staff of the Fisheries Training Institute almost since its inception in 1967.

Thirteen students sat for the final examination of the Fisheries Management and Technologies Course and 100 per cent success was obtained. Of the seven boatbuilders who sat for the Uganda Trade Test, six passed and the same number passed the finals of the East African Certificate Examination in boatbuilding.

Teaching in the Fisheries Management and Technologies Course laid more emphasis on the practical side of work in fisheries management and technologies. Students spent a lot of time on the trawling programme around Buvuma and the Ssese Islands and had accumulated a lot of information on the stocks of both *Tilapia* and *Haplochromis* in these areas.

The teaching of fish processing still suffered from lack of staff and was mainly carried out by members of staff of the department from headquarters, assisted by those members of staff of the Fisheries Training Institute whose services could be made available. However, every effort was being made to recruit full-time fish processing technologists.

Various experiments were carried out on the production of fish soup made from *Haplochromis* using materials that were being fished by the students themselves. The salting of *Haplochromis* was also carried out and trial marketing of this fish made.

The boatbuilding section, in spite of working under very crowded conditions, recorded a number of achievements. During the year, six boats of different designs were constructed by the students as part of their training programme. Four of these boats were sold to different Government departments and to private individuals. After practical trials in the field, the design Kimbo, which was made in the previous year, was improved upon and was ready for trials again. Another new design was made and was ready for testing.

Construction of the new boat-yard was completed but it had not been handed over for use by the students. When this is eventually handed over the overcrowding problem will be overcome and students will benefit from both working conditions and use of new equipment.

Construction of staff houses was in progress and it was hoped this would alleviate the very difficult housing accommodation shortage facing members of staff.

The Institute was the site for a boatbuilding training centre in small fishing boats design and construction which was organised by the Food and Agriculture Organisation of the United Nations, in conjunction with the Fisheries Department, and sponsored by the Swedish Agency for International Development. The Training Centre was attended by participants from Kenya, Tanzania, Malawi and Uganda. It was followed by a seminar for Senior Fisheries Officers from Uganda, Kenya, Tanzania, Sudan and Malawi and was also attended by observers from the Perkins Group of Engines in the United Kingdom, Peters Engines, Dalgety Technical Services, Gomba Marine, and several other personnel from the Food and Agriculture Organisation of the United Nations in Rome, and the timber utilization section of the Forestry Department.

At the Training Centre emphasis was put on constructing boats that would be used in the exploitation of the fishery resources of the great lakes, constructed in simple and easy designs, and also the use of new materials such as ferro-cement. Participants from Kenya, Tanzania and Uganda, therefore, worked on three different types of boats suitable for a particular fishery. The Kenya group worked on an open boat suitable for fishing on Lake Rudolf powered by an outboard motor. The Tanzania group worked on a wooden 25 ft. boat powered by a 16 h.p. Peter inboard engine. This boat is suitable for gill netting as well as trawling on Lake Victoria. The Uganda participants constructed a 41 ft. trawler in ferro-cement, powered by 110 h.p. Perkins engine suitable for trawling on Lake Victoria. While the Kenya and Tanzania boats were completed by the end of the seminar, it was not possible to complete the 41 ft. trawler by the Uganda participants due to delays in the arrival of some materials and expert assistance required in the installation of the engine and the winch. The boat, however, had been completed and ready for launching at the end of the year.

Construction of a Ferro-cement boat, one of which would be used in exploitation of the great lakes.

Finally, I would like to thank all members of staff who have worked under some difficult conditions who dedicated themselves to the course of fisheries development. I would also wish to thank those organisations both local and foreign who have assisted in the various projects that have been undertaken by the department. All of these have contributed to a successful year, and I will call for their rededication for further development ahead.

S. N. SEMAKULA,
*Chief Fisheries Officer.*

## FISHERIES DEPARTMENT STAFF LIST 1971

| | |
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| *Personal Secretary (on temporary appointment)* | C. M. Johnson (Mrs.), Entebbe. |
| *Higher Executive Officer* | M. R. Fernandes, Entebbe. |

| | |
|---|---|
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| | J. B. Mugenyi, Kajansi Experimenta Station. |
| *Librarian* .. .. .. | .. M. Vaughan, Entebbe. |
| *Clerical Officers and Assistants (15).* | |
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| | G. Odong, Gulu. |
| | J. Senkoko, Arua. |
| *Fisheries Assistants Grade I (35).* | |
| *Fisheries Assistants Grade II (79).* | |
| *Senior Coxswain (1).* | |
| *Deckhands (12).* | |

FISHERIES TRAINING INSTITUTE

| | |
|---|---|
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| | J. R. Okech. |
| *Senior Fisheries Assistant* .. .. | .. A. O. Emurwon. |
| *Master Boat-builder* .. .. | .. P. Roos (Norad). |
| *Boat-building Technical Teachers* | .. Z. B. Machumirwa, A.M.I.N.A., C. and G. (Full Tech.). |
| | H. B. Kibego, C. and G. (Final). |
| | F. L. Zake, C. and G. (Final). |
| | S. I. Kisembo. |
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| *Master Fisherman* .. .. | .. R. Pyne (CIDA). |
| *Mechanical Engineering Instructor* | .. R. Adams (CIDA). |

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